

# UMATH - Mathematics Utility

The UMATH utility enables you to perform mathematical computations.

UMATH has two modes:

- Math (MTH) mode
- Function (FCN) mode

This chapter covers the following topics:

- Command Format
  - Math Mode
  - Function Mode
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## Command Format

The primary method for invoking UMATH is to enter the command:

**\*UMATH**

The next screen to appear contains several lines of brief instructions on using UMATH. At this time, you are already in Math Mode, which is the default.

Note that you can switch between the two modes by entering "MTH" or "FCN" and pressing ENTER.

## Math Mode

In MTH mode (the default mode), you enter an arithmetic expression using the actual numbers to be used in the calculation combined with one or more arithmetic operators. (The operators "\*", "/", "+", and "-" represent multiplication, division, addition, and subtraction, respectively.) Use parentheses to specify the order of operations. Note that decimal fractions are permitted for decimal format only.

Note also that you must enter Hex numbers (always integers) as X1CD or ABC (if the number starts with a character A through F).

## Example

To divide the sum of  $140 + 16 + 3,228$  by 4 and then subtract 7, enter the following calculation while in Math (MTH) mode:

**((140+16+3228)/4)-7=**

When you press ENTER, UMATH returns the answers in both decimal (DEC) and hexadecimal (HEX) format, as shown below:

DEC=839  
HEX=0347

**Note:**

When a calculation results in a fraction, only a decimal format answer is returned.

## Function Mode

To use Function Mode, enter FCN and press ENTER. The next screen will prompt you to "ENTER EXPRESSION". At this time, you can enter up to 10 one-character variables, for example,  $A + B/(C - D) =$ . When you press ENTER, UMATH instructs you to enter a value for each of the variables in the format  $A=xx$ ,  $B=xx$ ,  $C=xx$ , etc., where  $xx$  represents the actual value(s). Press ENTER again after entering the required values, and UMATH displays the result of the calculation using those values in both decimal (DEC) and hexadecimal (HEX) format (if the result is an integer value), or decimal format only (if the result is a fraction).

### Example

Let's say you're a teacher calculating final grades for the semester for a class of 30 students. You have five grades to average: three exercises which count a total of 40%, a midterm test which counts 20%, and a final exam which counts 40%. While in Function (FCN) mode, enter:

$((a+b+c)/3)*.4)+(d*.2)+(e*.4)=$

After pressing ENTER, at UMATH's prompt, enter the first student's grades in the sequence listed above in the format:

$a=79, b=84, c=90, d=82, e=94$

When you press ENTER, UMATH will return the answer:

DEC=87.733,333,333

Note that since the above calculation results in a fraction, only a decimal format answer is returned.

Press ENTER again, and UMATH prompts you again; enter the second student's grades in the same format as for the first student.